

Amendments to the Drawings:

The drawing sheet attached in connection with the above-identified application containing Figure 5 is being presented as a new formal drawing sheet to be substituted for the previously submitted drawing sheet. The drawing figure 5 has been amended. Appended to this amendment is an annotated copy of the previous drawing sheet which has been marked to show changes presented in the replacement sheet of the drawing.

The specific change which has been made to Figure 5 is the inclusion of reference sign f0, and correcting the misspelling of “filter”.

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 4-5 and 8-9 are currently being amended.

This amendment changes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 4-5 and 8-9 are now pending in this application.

Drawings

The drawings were objected to as failing to comply with 37 CFR 1.84(p)(5) for not including reference sign “f0” in Fig. 5. Fig. 5 has been amended to include reference sign f0, thus overcoming the objection. Fig. 5 has also been amended to correct the misspelling of “filter”.

Claim objections

Claims 4 and 5 were objected to. Claims 4 and 5 have been amended to address the issues raised in the Office Action, and Applicant submits that the objection has been overcome.

Rejections under 35 U.S.C. § 112, second paragraph

Claims 4, 5, 8 and 9 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Claims 4 and 5 stand rejected under 35 U.S.C. § 112, second paragraph as being incomplete for omitting essential structural cooperative relationships of elements. Claims 4, 5, 8 and 9 have been amended to address the issues raised in the Office Action, and Applicant submits that the rejection has been overcome.

Rejections under 35 U.S.C. § 103

Claims 4, 5, 8 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,585,803 to Miura et al. ("Miura") in view of U.S. Patent No. 5,428,308 to Maeda ("Maeda"). Applicant respectfully traverses these rejections for at least the following reasons.

Independent claim 4 recites "sending said frequency data as a common signal source to each of said plurality of receivers via signal sequences that correspond to a wireless channel, the signal source supplied as a digital signal", "in each of said receivers, converting the digital signal to an analog signal based on a clock signal that is common to all of said receivers" and "in each of said receivers, generating local oscillation signals in which phase and amplitude are matched in all of said receivers based on said analog signal." Thus in claim 1, frequency data is sent as a common digital signal source to each of a plurality of receivers, the digital signal containing the frequency data is converted to an analog signal, and then local oscillation signals are generated in each of the receivers, in which phase and amplitude are matched in all of the receivers based on the analog signal. Miura and Maeda fail to suggest this combination of features of claim 1.

Miura discloses an apparatus and method for controlling an array antenna. The apparatus includes antenna elements A1 through AN, which provide respective signals to receiver modules RM-1 through RM-N, each comprising a low noise amplifier 2 and down converter 3 which frequency converts a radio signal by mean of a first local oscillation signal from the first local oscillator 11 (col. 17, lines 21-29).

The Miura apparatus, in contrast to the claim 1, does not function to generate local oscillation signals in its receivers RM-1 through RM-N, where the local oscillation signals generated are matched in phase and amplitude based on a frequency data signal that is common to all the receivers. In Miura, the local oscillation signal is provided by a single oscillator 11. Miura does not disclose that phase and amplitude of oscillation signal are matched at each of receivers, much less by the specific method based on a frequency data signal common to all the receivers. The Mirura system appears to be similar to the prior art system as shown in Figure 1 of the present application, where a single local oscillator is used to provide a local oscillation signal to each of a number of receivers. As discussed in the

present specification on page 2, lines 7-10, such a system is subject to the occurrence of phase error. By contrast in the present claim 4, the local oscillation signals generated are matched in phase and amplitude.

It is noteworthy that Miura provides phase difference correcting circuits PC-1 through PC-N only at the point after the local oscillation signal has been generated and combined with the signal from the antennas. Thus, Miura is not concerned with providing local oscillation signals generated at each receiver that are matched in phase and amplitude, because the phase is corrected for after combination with the antenna signal.

Maeda was cited for disclosing a frequency synthesizer comprising a clock generator, but fails to cure the deficiencies of Miura.

Claims 6, 8 and 9 respectively recite “in each of said receivers, generating local oscillation signals in which phase and amplitude are matched in all of said receivers based on said analog signal”, “in which phase and amplitude are matched at all of said receivers based on said analog signals”, and “in which phase and amplitude are matched at all of said receivers based on said analog signals”, and thus are patentable for reasons analogous to those above with respect to claim 4.

Moreover, claim 9 further recites “a selector/converter that selects from a signal sequence and signal-converts shift data, from which a desired frequency is obtained from the plurality of said signal sequences.” Maeda further fails to suggest a selector/converter as recited in claim 9.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a

check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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Fig. 5

